CLAIMS

Therefore, having thus described the invention, the following is claimed:

1. A transient pre-emptor comprising:

a processor configured to detect transients in a communications system, wherein after the processor detects a transient, the processor causes a data communications equipment to reduce a data transmission rate from an original rate to a lower rate.

2. The transient pre-emptor of claim 1, wherein the processor is a digital signal processor.

3. The transient pre-emptor of claim 1, wherein the processor is further configured to measure the length of time between consecutive transients.

4. The transient pre-emptor of claim 3, wherein the processor is further configured to determine the cadence of transients.

5. The transient pre-emptor of claim 3, wherein the processor is further configured to revise a cadence estimate for transients.

6. The transient pre-emptor of claim 1, wherein the lower rate is equal to zero.

7. The transient pre-emptor of claim 6, wherein the processor is further configured to cause the lower rate to be equal to zero by causing a polling signal to the data communications equipment to be suspended.

8. The transient pre-emptor of claim 1, wherein the transient pre-emptor is situated in a data communications equipment (DCE) device located at a central office of the communications system, the DCE located at the central office being coupled via a copper pair to a data communications equipment (DCE) device located at a customer premises, and wherein after the processor detects a transient, the DCE located at the central office sends rate information over the copper pair to the DCE located at the customer premises to inform the DCE located at the customer premises that the DCE located at the central office and the DCE located at the customer premises are to transmit data at a reduced, pre-selected transmission rate.

9. The transient pre-emptor of claim 8, wherein after the rate information is received by the DCE located at the customer premises, the DCE located at the customer premises and the DCE located at the central office begin communicating data over the copper pair at the lower transmission rate.

10. The transient pre-emptor of claim 9, wherein after a predetermined period of time, the DCE located at the central office sends rate information to the DCE located at the customer premises that informs the DCE located at the customer premises that the DCE located at the central office and the DCE located at the customer premises are to begin communicating data at the original transmission rate.

11. The transient pre-emptor of claim 10, wherein after the DCE located at the customer premises receives the rate information indicating that the DCE located at the central office and the DCE located at the customer premises are to communicate data at the original transmission rate, the DCE located at the central office and the DCE located at the customer premises begin communicating information over the copper pair at the original transmission rate.

12. The transient pre-emptor of claim 11, further comprising:

a low-pass filter coupled to the copper pair; and

an analog-to-digital converter coupled to the low-pass filter, the analog-to-digital converter receiving information passed by the low-pass filter, the analog-to-digital converter converting the information received thereby into digital information.

13. A transient pre-emptor comprising a processor configured to detect transients, wherein after the processor detects a transient in the communications system, the transient pre-emptor causes a data communications equipment to suspend data transmission.

14. A transient pre-emptor comprising:

means for detecting a transient in the communications system; and

means for causing a transmission rate over the communications system to be reduced after the detection of a transient in the communications system.

15. A transient pre-emptor comprising:

means for detecting a transient in the communications system; and

means for causing a transmission rate over the communications system to be suspended after the detection of a transient in the communications system.

16. A method for reducing transmission errors in a communications system comprising:

detecting a transient in the communications system; and

upon detecting the transient, causing a data communications equipment to reduce its transmission rate from an original rate to a lower rate.

17. The method of claim 16, further comprising the step of:

causing the data communications equipment to restore its data transmission rate to the original rate after a predetermined period of time.

18. The method of claim 16, further comprising the step of:

causing the data communications equipment to restore its data transmission rate to the original rate after failing to detect a transient for a predetermined period of time.

19. The method of claim 16, further comprising the step of measuring the length of time between consecutive transients.

20. The method of claim 19, further comprising the step of determining the cadence of transients.

21. The method of claim 19, further comprising the step of revising a cadence estimate for transients.

22. The method of claim 16, wherein the lower rate is equal to zero.

23. The method of claim 22, wherein the causing step includes the step of suspending polling.

24. The method of claim 16, further comprising the step of:

sending data rate information from a data communications equipment (DCE) located at a central office to a DCE located at a customer premises, the data rate information informing the DCE located at the customer premises that the DCE located at the customer premises is to communicate with the DCE located at the central office at the lower rate.

25. A method for reducing transmission errors in a communications system comprising:

detecting a transient in the communications system; and

upon detecting the transient, causing a data communications equipment to suspend data transmission.

26. The method of claim 25, wherein the causing step includes the step of suspending polling.

27. The method of claim 25, further comprising the step of:

after the occurrence of a subsequent transient, causing the data communications equipment to resume data transmission.

28. The method of claim 25, further comprising the step of:

after the lapse of a predetermined length of time, causing the data communications equipment to resume data transmission.

29. The method of claim 25, further comprising the step of:

after failing to detect a transient for a predetermined length of time, causing the data communications equipment to resume data transmission.

30. A computer program for reducing transmission errors in a communications system, the computer program being embodied on a computer-readable medium, the computer program comprising:

a routine that can detect transients in a communications system, wherein after the routine detects a transient in the communications system, the routine outputs an indication that the rate at which data is being transmitted by a data communication equipment (DCE) located at a customer premises is to be reduced.

31. The computer program of claim 30, wherein the routine is further configured to output an indication that the rate at which data is being transmitted by the DCE located at a customer premises is to be restored.

32. A computer program for reducing transmission errors in a communications system, the computer program being embodied on a computer-readable medium, the computer program comprising:

a routine configured to detect a transient in a communications system, wherein after the routine detects a transient in the communications system, the routine outputs an indication that data transmission by a data communication equipment (DCE) located at a customer premises is to be suspended.

33. The computer program of claim 32, wherein the routine is further configured to output an indication that the rate at which data is being transmitted by the DCE located at a customer premises is to be restored.